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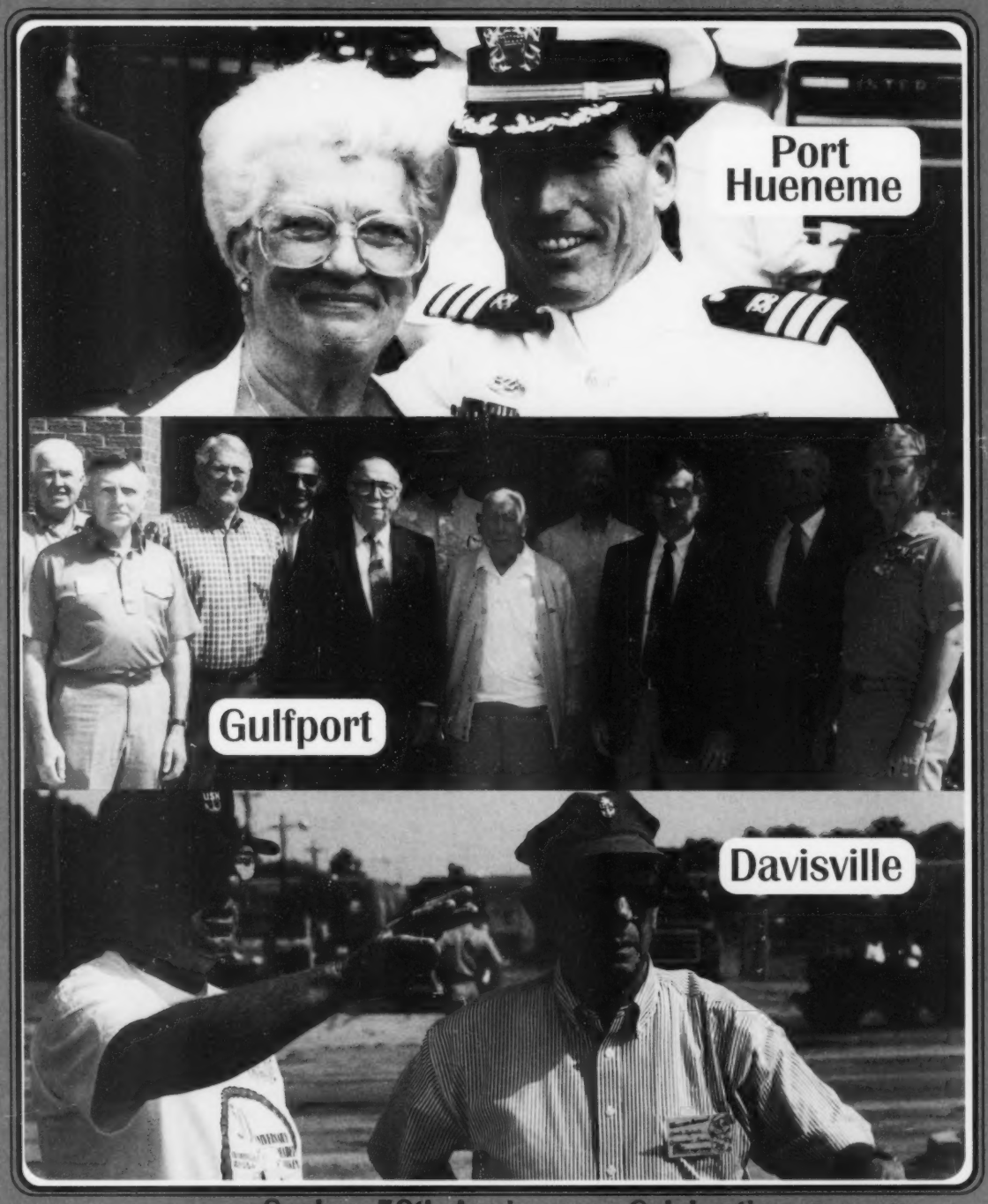

Seabee 50th Anniversary Celebration (Page 16)

Warren Eddy, a veteran of the 64th Seabee Battalion in World War II, and his wife, Marjorie, participate in the CBC Davisville, R.I., 50th Anniversary Celebration event. (Photo by CEC Elijah Hilbert, USNR)

On the cover...

The construction battalion centers celebrate 50 years of Seabee Can Do.

Top photo: Commander James T. Corbett, CEC, USN, and his mother, Margaret, share in the pleasures of the day at the Seabee 50 Fest at CBC Port Hueneme, Calif. CDR Corbett is commanding officer of Naval Mobile Construction Battalion Four.

Center photo: Ten former CBC Gulfport, Miss., commanding officers, all now retired, gather in Gulfport for a reunion. From left: Captain R.J. McHugh Jr., Captain W.W. DeGroot III, Captain A.M. Steadley Jr., Captain R.P. Phenix, Captain R.C. Engram, Captain Q.E.D. Lewis, Captain C.S. Daily, Captain H.H. Lewis Jr., Captain C.M. Maskell, and Rear Admiral W.M. Zobel. Captain W.C. Hilderbrand, the then-commanding officer, is at the far right.

Bottom photo: Frank Iafrate (right), the originator of the Seabee insignia, reminisces with CUCM Chuck Nehring, USNR (Ret) at the CBC Davisville, R.I., 50th Anniversary Celebration event.

Cover art by Bill Brack, Naval Facilities Engineering Command Headquarters, Alexandria, Va.

NAVY CIVIL Engineer

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The *Navy Civil Engineer* is intended for the information of regular and reserve personnel of the Civil Engineer Corps, United States Navy, and key civilian employees of NAVFAC, subordinate commands, and other mission-oriented activities.

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Speaking from Topside

I am very pleased to have this opportunity to address the Civil Engineer Corps/NAVFAC/Seabee family. From my perspective on the Chief of Naval Operations' staff, I can tell you that we depend on you more than ever today to continue to provide the quality service to the fleet that we have come to expect.

These are exciting and challenging times. The changes we are seeing are so vast that it defies comprehension—we may have to leave it to the historians to get the full picture. However, we do know that one direct impact is that we are undergoing what is perhaps the most comprehensive restructuring of the armed forces since World War II. The changes will leave no one untouched.

One of the ways we are reacting to the changes is reflected in the recent restructuring of the Navy staff. You are aware that we have been downsizing all staffs for some time now. More importantly, we now mirror more closely the organization of the Joint Staff. This reemphasizes something we have to do in all facets of our operation: get more efficient, and organize to be adaptable to our increasingly "joint" military. The OPNAV change may not be striking to those who only deal with my office: I simply change my code from OP-04 to N4; Rear Admiral Patrick Drennon, CEC, USN, simply becomes N44.

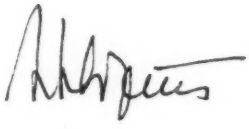
Organizational change is not all that is being done. We are positioning the naval services to be able to respond to what some have called "the new world order." Our new strategic direction is outlined in what you have heard referred to as the "White Paper," more accurately known as "...From the Sea." Put simply, our strategy has shifted from focusing on a global threat to regional challenges. However, regardless of the changes we will see, there will always be a Navy. For America to remain a positive influence in distant regions of the world we have to be there to deter aggression and respond to crisis. That is forward presence, and the Navy is the bedrock of forward presence. And as long as we have a Navy, we will have a shore establishment, and we will have a closely integrated Navy and Marine Corps team. We will therefore continue to have a mission for the Civil Engineer Corps and the Seabees.

We will call on you for expertise in the public works area—particularly important because we cannot expect MILCON dollars to increase in the near future. All your skill and innovation will be needed to reconfigure and enhance our shore establishment to ensure we can fully support the fleet, and can maintain the critical quality of life issues such as barracks and family housing. At the Navy staff level, it is our job to fight to get you the resources you need to do your job, but you are key to preventing a return to the days of the "hollow force." We will also increasingly look to you for expertise in the environmental area. In a future that depends on rapid response, Seabees are uniquely suited and positioned for contingencies. Seabees will find themselves called upon both to help keep our shore establishment in shape, and to respond to what may be an expanding role for the military in disaster relief and humanitarian assistance.

VADM Stephen F. Loftus, USN

The CEC/Seabee community will, of course, also face change. We can anticipate further Navy drawdowns, and we will have to carefully balance available resources against valid requirements. You can be sure that your leadership, including your Chief, Rear Admiral Jack Buffington, and RADM Pat Drennon, have all the skill, knowledge of how the system works, and understand the big picture necessary to guide you through these days. You can also be sure that the professionalism of the CEC, and the incredible performance of the Seabees in war, disaster recovery and humanitarian assistance have not gone unnoticed by the leadership of the Navy.

I extend my thanks to you all for the outstanding service you provide the fleet, and I look forward to working with you as we guide our Navy through these fascinating times.



STEPHEN F. LOFTUS
Vice Admiral, USN
Deputy Chief of Naval Operations (Logistics)

Lead-Containing Paint Abatement: What You Should Know

By Bruce Flowers

The potential health and environmental hazards from lead contamination exposures have long been recognized by public health authorities. Because of these hazards, lead-containing paint in housing has been regulated for 20 years. In recent years, the potential problems from the removal of lead-containing paint has received special attention, and regulations to contain the hazardous waste have been enacted. All Navy personnel involved in the removal of lead-based paint from housing or industrial structures should be aware of these regulations.

Housing

In 1971, the United States Congress passed the Lead-Based Paint Poisoning Prevention Act to eliminate lead-based paint as a source of human poisoning. In 1977, the Consumer Product Safety Commission banned the use of paint containing more than 0.06 lead (by weight of dry paint) from residential use. This action effectively eliminated lead from paint used on housing. In 1977, the Department of Defense issued a policy which actually eliminated the application of any lead-containing paints on Navy housing.

The Housing and Community Development Act of 1987 significantly expanded the coverage of the Lead-Based Paint Poisoning Prevention Act. Subsequently, the Department of Housing and Urban Development published interim guidelines for public housing. Although they do not currently apply to Department of Defense housing, use of these guidelines for Navy housing is prudent to provide safe conditions for all residents.

Although children are most sensitive to lead, people of all ages can receive adverse health effects. Lead-contaminated dust from lead-based paints are believed to be one primary source of lead contamination.

The Naval Facilities Engineering Command is preparing a worldwide program to inspect and determine the extent to which lead-based paint is in Navy family housing. Testing at all activities is scheduled to begin in FY 93 and continue through FY 95.

Testing and abatement

Testing to determine the lead content of paint can be done using a portable X-ray analyzer on-site or a sample can be taken for laboratory analysis.

Use of commercially available so-called "spot tests" should be limited since they provide very limited data. Subjects covered in the HUD guidelines that have universal application include:

- Choosing an abatement strategy
- Worker protection guidelines for lead abatement
- Abating the lead-contaminated paint hazard
- Cleanup

Bruce Flowers was the coding and composite materials consultant with the Naval Facilities Engineering Command Public Works Support Division. He passed away in the spring of 1992.

Art by Bill Brack

- Laboratories for paint and dust analysis and blood lead analysis

In lead-contaminated paint abatement in residential structures, it is necessary to know all options available because no one method will work all the time. The work should only be done by adequately protected, trained workers, under appropriate supervision. Blood levels of workers must be tested periodically as the work proceeds. The housing unit must not be occupied while the work is being done and final testing must be completed before the unit is reoccupied. Where appropriate, neighbors in the area must also be protected from contamination.

Improper paint removal techniques endanger the worker, the resident and other visitors to the unit. Appropriate abatement methods include:

- Replace components (Example: Doors or windows)
- Encapsulate (Example: Gypsum board over walls)
- Remove lead-contaminated paint
  - Off-site (Example: Send radiators off-site for dipping)
  - On-site (Example: Use a low dust generating process such as chemical stripping

Industrial facilities

Lead-pigmented paints were used on industrial structures well into the 1960s. Red lead oil-based primers (such

as TT-P-86) were the mainstay primers for all metals into the 1970s and continued to be at many activities until the 1980s.

At a typical Navy shore installation, it is likely that more than one-half of all nonresidential structures built before 1980 have lead-containing paint on their exterior and interior surfaces. As the age of the structure increases, the likelihood of lead in paint increases correspondingly.

Lead in paint films is *not* a hazard to Navy employees or other individuals unless it is peeling or removed for repairs or maintenance painting. Uncontrolled dust or small particles such as those produced in sanding, open abrasive blasting, chipping, grinding, or burning pose a health hazard.

The lead dust makes its way into an individual through contaminated food consumed at the work site, contaminated cigarettes, hand-to-mouth contact, and to a certain extent breathing the dust. Adults are typically not at risk to lead poisoning from casual contact with surfaces containing lead-containing paint somewhere within the paint film.

Lead in paint is not a hazard to Navy employees or other individuals unless it is peeling or removed for repairs or maintenance painting.

It is not necessary to implement large scale testing and removal of lead-containing paint solely to alleviate a potential lead hazard in the work place. As paint systems age and require maintenance and replacement, or the structure requires repairs, testing of the surfaces or structures for lead content becomes important. NAVFAC Design Policy Letter DPL-09B-0001, dated March 26, 1992, provides guidance on managing lead-containing paint on nonresidential structures.

The full cost of engineering controls for safe removal and disposal of lead-containing paint should be included in the economic analysis of maintenance and repair strategies.

Depending upon resources available and the required remaining useful service life of the structure, maintenance of the lead-containing paint in place may be a viable option.

Cost and control methodology

The costs for removal of lead-containing paints from both residential and commercial/industrial structures range from $3.50 to $10 per square foot. Disposal options for lead hazardous waste materials are limited, and landfill disposal may be banned in the near future. Total recycling of lead waste is a goal of the Environmental Protection Agency, but the recycling and disposal costs using current technology remain high.

Engineering controls for worker safety and containment of lead dust on site are becoming more commonplace and less expensive in industrial painting. In residential lead paint removal, consideration should be given to the alternative of removal and replacement of components such as doors, windows or trim. Sometimes replacement is less expensive than paint removal.

NAVFAC Guide Specification NFGS 02090, dated June 1991, tells how to develop contract documents for removing lead-containing paint. The guide specification deals principally with the issues of worker safety and environmental exposure associated with lead containing paint-removal operations.

Given the constraints placed upon our contracting efforts by Federal Acquisition Regulations and the Defense Acquisition Regulations, the best method of defining the contractor's work requirements for paint removal is to define the existing conditions, legal and contractual requirements, and desired results.

With planning, the issue of lead-containing paint in residential and industrial facilities can be handled using existing resources. ❑

Editor's Note: Richard Drisko, Ph.D., of the Navy Civil Engineering Laboratory in Port Hueneme, Calif., contributed to this article.

Everybody Wins with Partnering

By William G. Cooper, P.E.
and
John D. Collins, P.E.

Partnering creates an environment where the emphasis is on communications and problem identification and resolution rather than distrust and conflict.

Partnering is a means in which the key players involved in an acquisition project form a management team to facilitate the acquisition process. The team develops common goals and identifies mutual benefits. The team adopts a "win-win" philosophy that recognizes that trust, open communication and early problem identification and resolution are the keys to a project's success.

Partnering focuses on making the goals of the owner, designer and contractor and other key stakeholders better understood and easier to

William G. Cooper and John D. Collins are project managers at the Southern Division, Naval Facilities Engineering Command in Charleston, S.C.

The $20 million propulsion training facility at the Naval Weapons Station, Charleston, S.C., is being built using a partnering agreement.

achieve. Senior level management support is also needed as well as a personal commitment of the working level team members to guarantee the success of the partnership.

Partnering workshop

The stakeholders participate in a workshop that highlights specific team behaviors and defines measurable goals. An outside consultant is usually brought in to act as a facilitator and to provide the sense of impartiality that is important in achieving trust among the stakeholders. The facilitator is typically an industrial psychologist or management consultant with experience in developing interpersonal relationships and partnering agreements.

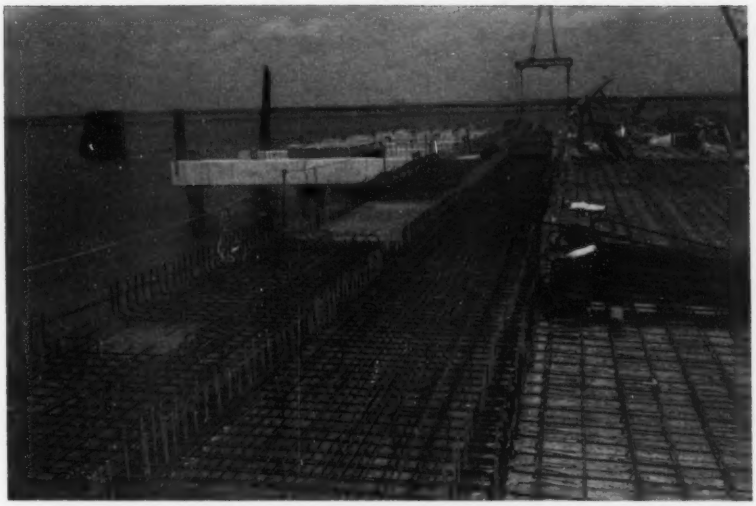
The workshop focuses on how each stakeholder will assist the team in successfully completing the project. The team works on strengthening interpersonal communications and conducts team-building exercises. The activities might include the completion of a Myers-Briggs indicator survey, which identifies personality preferences. Also typically included is a case study project, which would encourage teamwork and cooperation.

Each member of the partnership (including the resident officer in charge of construction, architect-engineer, contractor and customer) then tells the group his or her expectations concerning the project. This sharing of mutual expectations helps the group members realize that the goals of the contractor, owner and construction agent may not be mutually exclusive.

The partnering session includes the development of a problem-solving strategy for the team to use throughout the course of the project. The team identifies the most significant potential problem areas that would prevent the team goals from being achieved. These might include submittal processing, customer requested changes, administrative procedures, contractor variance requests processing and design deficiencies. Specific action plans aimed at reducing or eliminating problems are then developed.

Once overall project goals are established and strategies for problem identification and resolution are developed, the group drafts and signs a written agreement. The agreement identifies the team's project objectives and captures the essence of the partnership. This agreement will act as a cornerstone for communications, problem identification and resolution, and team commitment throughout the project.

Partnering requires stakeholder involvement for the duration of the project. The plan developed by the group promotes the continued pursuit of the partnering arrangement and the achievement of the mutually established goals. The plan may call for follow-up meetings at key points during the project to check on the progress of the partnership and to reinforce the partnering commitment. Any problem areas that may be affecting the partnership goals should be identified at the follow-up meetings so the group can resolve those problems.



The pier at the propulsion training facility in Charleston, S.C., being prepared for a concrete pour.

Partnering projects

The Southern Division, Naval Facilities Engineering Command used the partnering agreement on two recent Navy military construction projects. They were a $20 million propulsion training facility at the Naval Weapons Station, Charleston, S.C., and a $37.8 million explosives handling wharf number two at Naval Submarine Base, Kings Bay, Ga.

Both partnering agreements provided the government and contractor with valuable insights on the concerns and goals of each other's organization.

On the propulsion training facility, the contractor was interested in completing a successful "showcase" project that would lead to future business opportunities for his firm.

On the explosives handling wharf, the contractor also expressed a similar interest in reputation, but also identified other objectives. The contractor felt that completing the project on time, safely and in accordance with the plan and specifications would result in quality construction and ultimately be more profitable for his firm.

Other NAVFAC engineering field

divisions are using the partnering process on some notable large complex projects, such as:

- Chesapeake Division: $115 million Naval Investigative Command headquarters in Suitland, Md.
- Atlantic Division: $330 million naval hospital at Portsmouth, Va.
- Northern Division: $38 million drydock modernization at Portsmouth, N.H.
- Southwestern Division: $30 million hospital at Twentynine Palms, Calif.
- Pacific Division: $81 million waterfront complex at Pearl Harbor, Hawaii
- Western Division: $18.9 million industrial support complex at the Puget Sound Naval Shipyard, Wash.

Partnering can also be used for small projects. Since partnering is an attitude, the same key elements of a partnership—trust, openness, communication, mutually attainable goals and problem identification and resolution—are worthy objectives on any size project.

The concept of partnering is a philosophical shift in our way of doing business. It's a structured approach to changing the adversarial attitudes that have traditionally existed between government and contractor. Partnering complements Total Quality Leadership by driving out fear, breaking down barriers between staff members, removing barriers to pride of workmanship, creating a constancy of purpose and improving leadership.

More than anything else, a partnership helps develop a cooperative environment where the emphasis is on communications and problem identification and resolution rather than distrust and conflict. The partnership is a way of conducting business that encourages all team members to develop and pursue a set of mutually attainable goals eventually leading to a project completion that can be considered successful by all parties. ❑

A view of the naval hospital under construction in Portsmouth, Va. Partnering is being used in this project.

Let's Try Using Computers to Operate Buildings

By LT James P. Beckett, CEC, USN

The U.S. Navy faces a challenging future in facilities maintenance and operations. With a large share of its facilities constructed during the World War II era, the Navy owns an aging portfolio of buildings. As existing buildings and their component systems get older, repair requirements increase and the burden on the facility operator intensifies. Replacing old systems with new ones does not necessarily alleviate the problem. New systems can even *worsen* the problem. Today's components and control systems are far more complex than those they replace. As newer, more sophisticated systems are developed, the veteran repair person, adept with conventional systems, may be overwhelmed.

To remain successful in our facility operations mission, we must take advantage of the latest computer technology to help our operators cope with their increasingly demanding tasks. Computers must be used to run our facilities as efficiently and effectively as possible. Computers can be used to provide information (through the use of *information systems*) and to provide guidance to the operators (through the use of *expert systems*).

This article discusses specific areas in which information systems and expert systems could be used in facilities operations.

LT James P. Beckett, CEC, USN, recently completed his MS degree in construction management at The Pennsylvania State University and is currently serving as officer in charge of det Iwakuni and echo company commander, Naval Mobile Construction Battalion 74, Gulfport, Miss.

Information systems

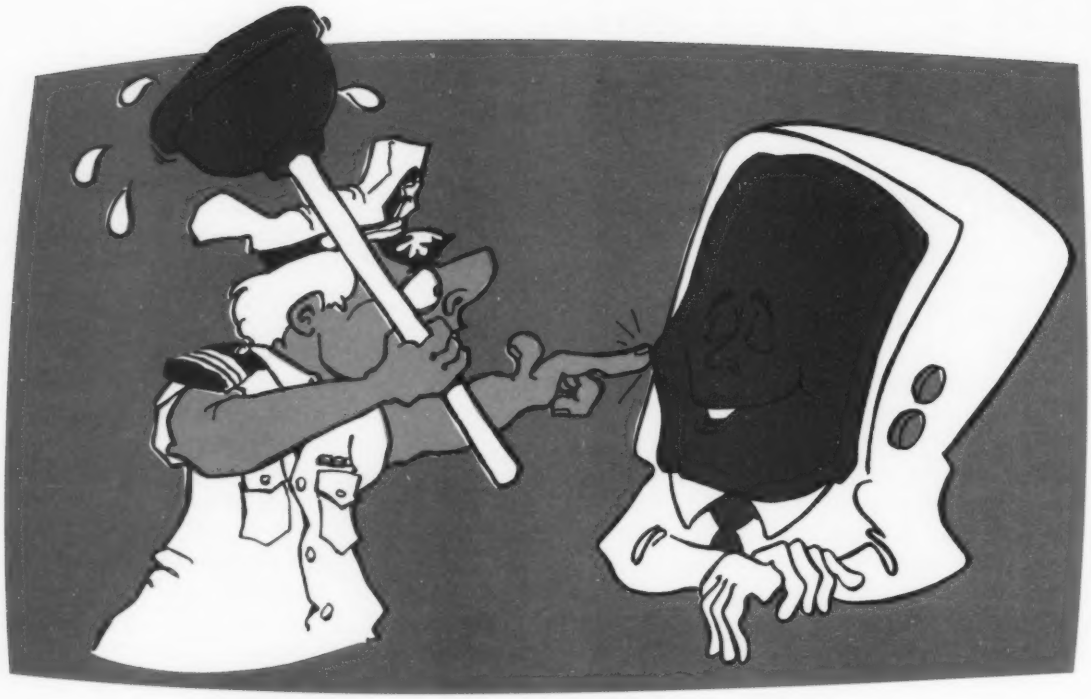
The facility operator (such as the public works officer or the staff civil engineer) is responsible for the longest and most costly phase of the facility life cycle. The operations phase accounts for 85 percent of the overall facility cost (Smeallie and Zitzmann, 1987). Yet the operator often receives very little information about the new or renovated facility. Detailed information about components, finishes and equipment—information that exists during the design and construction phases—may get lost and never get to the operator. If the information does reach the operator, the information may be disorganized. A computer-based system for organizing and storing that information so it may be readily accessed by the operator is needed. [Editor's Note: See *OMSI: A Tool for Providing Technical Information to Operate and Maintain New Facilities* in the Spring 1992 issue of the *Navy Civil Engineer* for an alternate method of organizing facility information.]

Important components of an information system are product models, integrated databases and "user friendly" data retrieval.

- *Product models.* The first step in the successful implementation of an information system is to organize information. Product models are the logical tool. A product model breaks down something large or complex, like a building, into its more manageable component parts.

Product models can be quite simple. For instance, a product model that uses only five codes can effectively identify building components spatially and functionally for accessing the information needed by the operator (Beckett, 1991). Users can select views on the computer showing only the information they need. For instance, a plumber can select a display showing just plumbing system components. The operator of a particular wing or floor can limit queries to information about just the operator's spaces. Locating the source of water leaks, for instance, can be simplified by enabling the user to display all pipes (such as plumbing, mechanical and fire sprinkler systems) in a specific area simultaneously rather than having to flip between the building's "P," "M" and "F" drawings.

- *An integrated information system*, such as the Integrated Database (IDB) (National Research Council, 1986), could be used to store information about buildings. The IDB is pri-



Readily accessed information on facility maintenance is needed by the operators

Art by Bill Brack

marily a data storage and communications tool for design and construction information. The operator would have quick access to a system's information. Imagine being able to call up a catalog cut of a water pump to determine replacement part numbers and ordering information. Imagine being able to access as-built drawings to determine the routing of pipes concealed behind a wall. An IDB could store this information as well as contract specifications, warranties and construction progress photographs. An IDB could also store information generated and used exclusively by the operator.

- *"User friendly" data retrieval* would allow users of all skill levels to use the system. Dynamic, 3-D graphic displays improve simplicity by making the computer image appear like the actual facility. Though relatively new to the industry today, 3-D graphics, due to their lifelike representation of objects, are quickly becoming the industry standard for exchange of design and other graphical information.

Existing computer programs enable users to simulate walking through a facility. The same graphics used by designers to lay out the facility could easily be used by the operator to review designs, trace ductwork through a mechanical room, or locate isolation valves in an emergency to secure water to a floor or wing.

The implementation of an integrated information system and related tools to organize and access information about facilities would offer many benefits. Most importantly, it would improve the operator's effectiveness. Trouble desk operators would be able to visualize better callers' problems by looking at the callers' building, floor, or even office on a computer screen as they took the call. Consequently, work descriptions would be more detailed and accurate. Trade and shop supervisors would be able to assign work crews better by easily determining which systems are contained in a building. For instance, by consulting the computer they could easily tell whether an office is heated

with an electric fan coil unit or by steam and thus dispatch the appropriate work crew.

Work crews would benefit. By using a portable computer, they would have on-line access to view as-built drawings, contract specifications and even manufacturer submittals in the field. They would also know, before leaving the shop, which materials might be needed for a given repair. For instance, if a building contained only copper pipe, they could bring the necessary fittings and a soldering torch with them. In general, much more of the information from the design and construction phases would be available to the facility operator.

Expert systems applications

Expert systems are systematic packages for organizing the knowledge and experience of "experts" so that it may be shared with less experienced users. In Navy terms, it is like having a master chief's mind and years of experience inside a computer. Expert systems have seen wide applicability as troubleshooting tools in the manufacturing industry as well as in other areas. Expert systems can be similarly applied by the facility operator in these areas:

- *Troubleshooting.* Expert systems could be used to help tradesmen troubleshoot and maintain newer pieces of equipment. As new technologies emerge and components become increasingly specialized, expert systems could provide the specialized skills needed to make repairs. They could offer advice, show slide sequences demonstrating proper equipment disassembly, and even provide audio or visual clips of different symptoms and give the correct repair procedures for each. With little additional training, tradesmen would be better able to repair and maintain even the most complicated new systems without having to rely upon a factory representative or other expert. This improved troubleshooting capability would be an important advantage when considering contingency or remote operations.

- *Managing energy consumption.* Given various inputs (for instance, how sunny it is, what the temperature is, and even whether it is raining), an expert system could adjust the building's environment intelligently. More than just a sophisticated HVAC control system, the expert system would be pro-active rather than reactive. For example, the system could learn normal patterns for office use and then cool off the conference room *before* the staff meeting starts each Wednesday afternoon so that people will be comfortable during the meeting.

- *Operating the building.* Expert systems could also be used in other important functions, such as monitoring all security and life safety systems. In addition to ringing a bell at the fire department, why not have the expert system report the specific floor or room number and indicate if it was a pull station or a smoke detector that triggered the alarm? Why not have the expert system call the duty officer as well? Other preprogrammed or "smart actions" could include the opening and closing of valves, locking and unlocking of doors, and securing of electrical power in an emergency.

Cost savings from using an expert system would be realized in the maintenance and repair budget, though not necessarily because of a decrease in the size of the work force. Instead, the savings would come from increasing technicians' effectiveness. The expert system would enable a facility operations staff of fixed size to cope with a growing demand for specialized repair skills. It would provide the necessary knowledge and background on a wide array of components and offer advice. Savings would also be achieved by optimizing management of mechanical and electrical systems.

•••

As the task of operating buildings becomes more complex, we must turn to available computer technology to make our building operators as effective as possible. Future systems must help the operator by quickly and simply providing information about the building's components and systems. They should also provide tradesmen with repair and troubleshooting procedures. New applications for computers in civil engineering are continually being developed. As Navy leaders, we must implement the technology and to foster the development of future systems that will enable us to operate our aging fleet of buildings well into the future. ❑

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Electrical Safety Training: It Could Save Your Life

By Indu D. Hira, P.E.

Navy safety offices have reported 53 serious electrical mishaps, including 19 fatalities, over the past five years. The Naval Facilities Engineering Command, in an effort to avoid these tragedies in the future, issued Publication P-1060, *Electrical Transmission and Distribution Safety Manual*, in July 1990 and placed renewed emphasis on the need for electrical safety training to increase the safety of the work force.

This article gives an overview of the NAVFAC electrical safety training program.

Highest priority for safety training should go to workers at highest risk. Because of the greater energies with which high voltage electricians work, they normally should be given first priority. Low voltage electricians should come second, followed by other trades that might come into casual contact with sources of electrical energy.

Examples of this last category are workers using scaffolds near high voltage lines and construction personnel who might inadvertently contact hidden energized wires underground or in building walls. It is essential that employees who are not electricians, but work in and around electrical areas, also receive adequate training to guarantee their safety and that of their coworkers.

The depth and complexity of the training should be tailored to the workers, taking into account previous training in their trades, experience, the complexity and risks associated with their jobs, and their supervisors' observations concerning expertise and work habits. It should be remembered that training is not a substitute for adequate supervision.

Training sources

The source selected will depend on the complexity of the training required and the availability of local resources. Generally, training sources fall into three categories—in-house, commercial and on-the-job training.

In-house training can be provided by occupational safety and health personnel or knowledgeable electricians with the use of aids such as videotapes, manuals such as NAVFACENGCOM P-1060, standard operating procedures or national consensus standards. SOPs and manuals are often available from local utility companies. The NAVFAC Occupational Safety and Health Support Office in Norfolk, Va., publishes a training resource list naming sources of audiovisual training programs, manuals and formal training courses. The list includes the names of electrical supply companies that have high voltage safety videos that can be borrowed and copied at minimum or no cost.

Commercial. A list of suggested commercial training sources and points of contact with contracting experience as well as a suggested high voltage electrical safety course outline is available from NAVFAC. This list is by no means exhaustive and other sources are undoubtedly available. Commercial training should be considered for workers dealing with complex systems or where the risk of injury is high. Courses should cover the contents of these publications:

The depth and complexity of the training should be tailored to the workers.

- Naval Facilities Engineering Command Publication P-1060, *Electrical Transmission and Distribution Safety Manual*, July 1990.

Indu D. Hira, P.E., is an electrical engineer at the Naval Facilities Engineering Command Headquarters in Alexandria, Va.

• Title 29, Code of Federal Regulations, Part 1910, Subpart S - Electrical. Contains standards for electrical work in general industry. Training requirements contained in Section 1910.332 were effective Aug. 6, 1991.

• Title 29, Code of Federal Regulations, Part 1926, Subpart V - Power Transmission and Distribution. Contains standards for electrical work in the construction industry.

• Title 29, Code of Federal Regulations, Part 1926, Subpart K - Electrical. Contains standards for safe work practices to be followed by those working adjacent to electrical hazards on construction sites and should be included for those in casual contact with such hazards.

Naval activities are encouraged to provide electrical safety training for their personnel as soon as possible. To encourage wide participation in this training, all activities in the region of the command sponsoring the training should be invited to participate.

On-the-job training. The success of OJT depends largely on the quality of supervision, the structure of the training and the quality of formal training during the OJT period. It is not sufficient to simply allow employees to learn their job by doing it on their own.

•••

For more information and assistance with electrical safety training, call Indu Hira, Code 1652E, NAVFAC, at DSN 221-2866 or commercial (703)325-2866; or Mary Wingard, Code 18K3, or John Bodi, Code 18K2, of the NAVFAC Occupational Safety and Health Support Office at DSN 564-5193 or commercial (804) 444-5193. ❑

Using Computers to Analyze Steady-State Seepage Beneath Drydocks

By Shujie Chang, P.E.
and
Arthur Wu, D.Sc., P.E.

Ground water behavior is important when analyzing the stability of drydocks, as water flow creates a change in pore water pressures, which influence the soil's effective shear strength. The changes in effective shear strength may affect the structure's stability.

Traditionally, constructing flownets has been the principle procedure used in seepage analysis. Recent advances in computer technology, however, have made numerical methods such as the finite element method ideally suited for solving flow through soil media.

In FY 91, the NAVFAC engineering investigation program sponsored a project to analyze steady-state seepage beneath drydocks using a finite element program on a personal computer. This computer program converts the vast finite element solutions to flownets, which can be used to estimate seepage quantity and pore water pressure distribution in two-dimensional flow problems.

Existing analysis limitations

Existing drydock stability analyses using the personal computer often do not take seepage effects into consideration or assume the seepage stresses are hydrostatic. This can be a gross error, especially with the presence of cavities and pumping. Current analysis techniques also have difficulties in handling multipermeability and anisotropic soil conditions. (The current techniques sometimes mistakenly assume soil conditions are uniform and isotropic.) And finally, the results are often difficult to interpret because of the vast amount of data obtained.

Example analyses

Here are some sample analyses using the finite element program.

Figures 1 and 2 show the ease of performing finite element seepage analyses using the personal computer and interpreting the results using

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Shujie Chang is a program manager at the Naval Civil Engineering Laboratory in Port Hueneme, Calif. He is currently detailed to Naval Facilities Engineering Command Headquarters in Alexandria, Va. Arthur Wu is a geotechnical engineer and consultant at NAVFAC Headquarters.

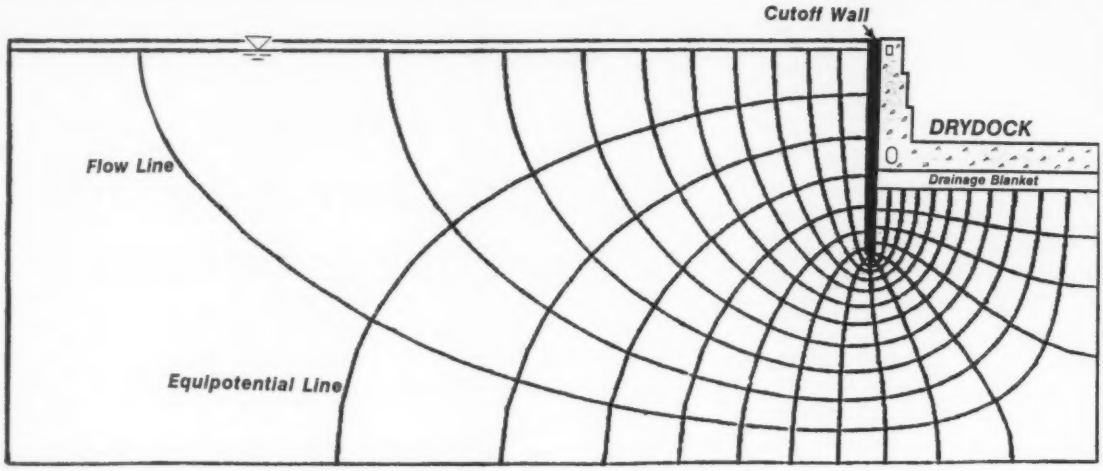


Figure 1. Flownet for Example Drydock Analysis (Without Cavity)

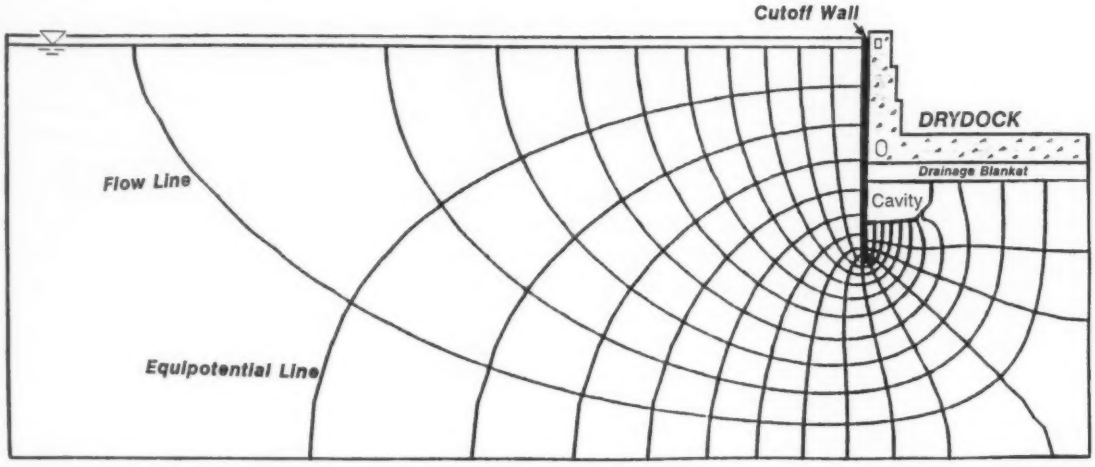


Figure 2. Flownet for Example Drydock Analysis (With Cavity)

flownets. Figure 1 is the solution flownet for a common drydock foundation problem with homogeneous soil conditions.

A cavity can be easily introduced into the problem by assigning very high permeability values to the elements representing the cavity.

Figure 2 shows the solution flownet when a cavity is introduced into the problem, hence the seepage stresses are different. Comparing Figures 1 and 2 shows that the equipotential lines in Figure 2 (with cavity) are occurring sooner than in Figure 1 (without cavity). This indicates that the seepage stresses are different at selected points within the foundation. This information is extremely valuable for predicting the presence of cavities underneath the drydock floor.

Figures 3 and 4 are solution flownets emphasizing the differences in the solutions with different soil properties. These figures show the importance of accounting for different soil conditions and seepage stresses when performing drydock stability analyses.

The analysis with the low rock

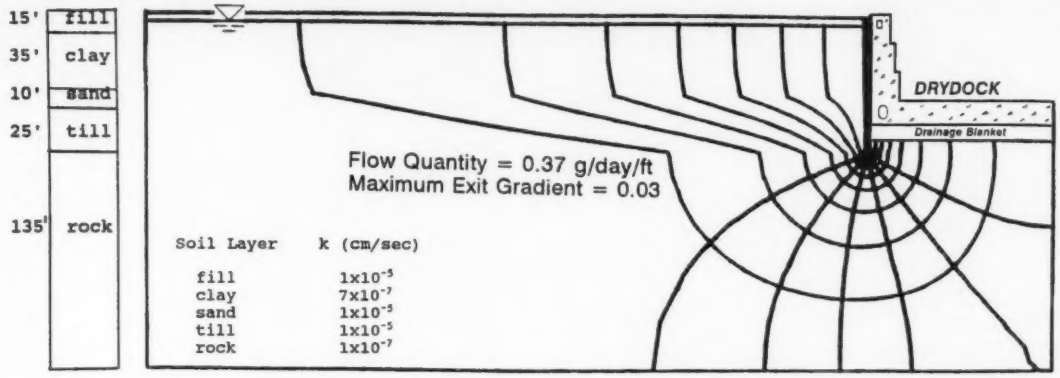


Figure 3. Flownet for Example Analysis Showing Effects of a Low Rock Permeability

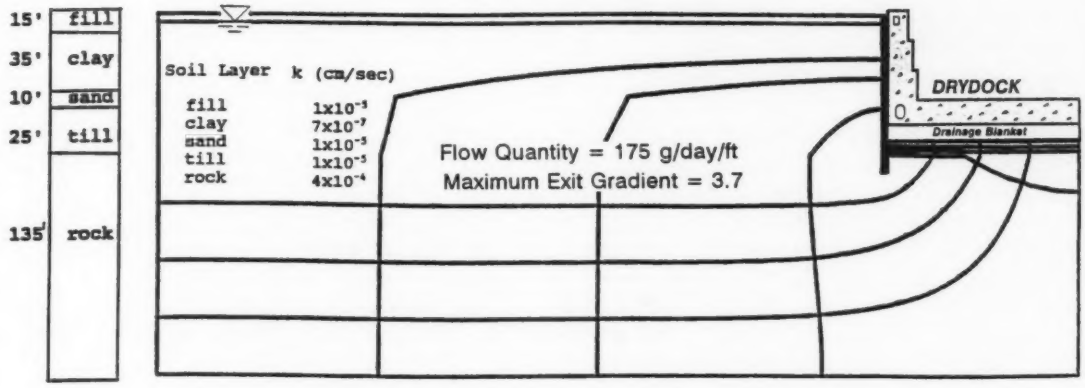


Figure 4. Flownet for Example Analysis Showing Effects of a High Rock Permeability

permeability (Figure 3) has a very low exit gradient and low flow quantity, where the analysis with the higher rock permeability (Figure 4) has a much higher exit gradient and flow quantity.

It is easy to see from the flownet that the exit gradient in Figure 4 is much higher because all the head is being lost near the surface. Also, because the porous rock permeability is so high, the flow of water is originating from the side boundary instead of the top.

Flownet applications

The objective of this finite element project is to perform seepage analyses on a personal computer. Many analyses, currently being performed manually or with higher powered computers, can be simplified. Parametric studies can be made for easier understanding of the results. This is extremely valuable especially in cases where mainframe computer time and instrumentation data are limited. Analyses can be used for:

- Establishing design criteria for underslab pressure control and dewatering system to reduce potential for cavitation and ground loss

- Establishing water pressure

design criteria for wall, slab and cutoff elements

- Designing permanent seepage cutoff elements to limit environmental contaminants

- Designing permanent seepage cutoff elements to limit dewatering pumping rates during drydock operations

Because the results of the analyses are presented graphically, they are easier to understand by design engineers. This method of presentation is already appearing in some NAVFAC design manuals.

•••

Continued dependence on aging drydocks and the need to certify safe foundations increase the importance the engineer must place on predicting ground water movement throughout the foundation. With computers, numerical techniques can provide faster and more accurate solutions. However, because the input soil parameters and boundary conditions are difficult to determine, there is always a risk that the wrong problem is being solved. Therefore, it is important that NAVFAC has a capability to perform parametric studies to model the field conditions.

To transfer the information to the engineer, the data should be converted from numerical data to flownets and graphical plots. Graphs reduce uncertainties and guesswork involved in predicting seepage behavior.

This EI project provides an analytical tool that can easily generate solutions which allow the engineer to better understand the problem. This understanding reduces uncertainty and ultimately minimizes the costs associated with instrumentation and engineering analyses on mainframe computers. ❑

RADM Bottorff, then-Commander, Naval Facilities Engineering Command and Chief of Civil Engineers, visits with Ronald Feldman, assistant conductor of the Boston Pops, after Seabee Night at the Boston Pops.

A Look Back at the 50th Anniversary Year

By CAPT Brian J. O'Connell, CEC, USN

The year 1992 has been a memorable one as we celebrate 50 years of Seabee Can Do tradition. In early 1991, Rear Admiral David E. Bottorff, CEC, USN, then-Commander, Naval Facilities Engineering Command and Chief of Civil Engineers, set the objectives for the anniversary year:

- Honor the heritage of past Seabee achievements
- Increase public recognition of today's Seabees
- Have *fun*!

In many ways, all over the globe, Seabees, past and present, did just that. This article will recap some of the highlights of the year.

CAPT O' Connell served as the executive chairman of the Seabee 50th Anniversary Committee.

The common thread of this wonderful year has been pride, patriotism and camaraderie.

Anniversary events began with a weekend of festivities in Washington, D.C., on Jan. 4 and 5. Tom Peters, a noted management expert and a former Seabee, was the guest speaker at the kickoff banquet on Jan. 4. The next day, the Seabee bronze relief was dedicated at the Navy Memorial, commemorating the date that construction battalions were authorized to be formed 50 years ago.

Throughout the Seabee community, special events were planned for the traditional Seabee Balls. Reports state that some balls were spectacular and set new attendance records. Based on reports, I estimate that more than 30,000 people attended a Seabee Ball or birthday outing.

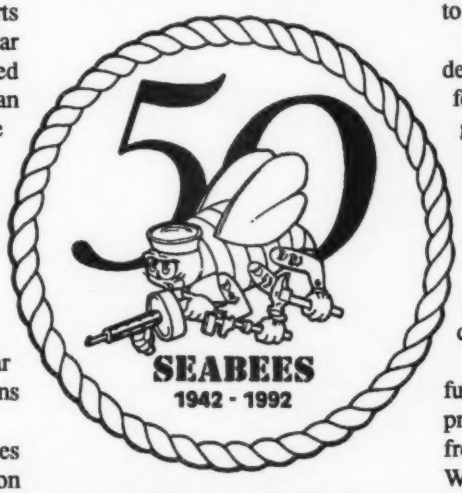
On the official Seabee birthday of March 5, Seabees appeared on ABC's *Good Morning America* and the *CBS Morning Show*.

Anniversary celebrations reached their peak during the summer months. Numerous World War II and later units held their reunions all over the country.

In May, more than 200 Seabees and their wives attended the reunion of the "first battalion" at Camp Allen, Va., where that unit was commissioned on March 15, 1942. While there, the 'Bees participated in dedicating a monument honoring the Seabees. A similar monument was erected at Camp Peary, Va., in September.

Each construction battalion center held an open house reunion in June for Seabees, their families, returning veterans and the neighboring communities. Construction Battalion Center Gulfport, Miss., spread its reunion over several dates. Construction Battalion Center Port Hueneme, Calif., set an attendance record. In tandem with the Construction Battalion Center Davisville, R.I., reunion, many Seabees attended Seabee Night at the Boston Pops, featuring the full orchestra donning Seabee green covers as they played the *Song of the Seabees*. The orchestra conductor, Ronald Feldman, announced: "My dad was a Seabee!"

RADM Bottorff spoke at a boot



camp graduation at Naval Training Center, Great Lakes, Ill., with 500 Seabee veterans and their families as guests. Afterwards, the generations attended a picnic hosted by Construction Battalion Unit 401.

Nineteen ninety-two is also the centennial of the birth of Admiral Ben Moreell, CEC, USN, the founder of the Seabees and original King Bee. His birthday was observed in ceremonies held in Salt Lake City, Utah, where he was born; Saint Louis, Mo., where he attended Washington University; Port Hueneme, Calif., at Moreell Hall (the new CECOS); and at the Naval Academy in Annapolis, Md.

Naval Mobile Construction Battalion 25 participated in a community action project in the small prairie town of Cando, N.D. Cando shares the motto of the Seabees for the same reason—they did not want any negative thinking in their town. The citizens were grateful for the Seabees "deployment" to help celebrate the 50th.

Congratulations from the President, Congress, Department of Defense leaders and proclamations from governors of 50 states were issued marking the 50th anniversary. Articles about the 50th anniversary appeared in many Navy and civilian magazines and newspapers, and many of the observances appeared on local television broadcasts.

It is hard to sum up this wonderful year. The common thread has been pride, patriotism and camaraderie, from the pioneer plank owners of World War II to the recent participants in Desert Shield/Desert Storm or the humanitarian disaster recovery deployments of the past action filled years.

Past or present, men and women, active and reserve, all share the Seabee pride as exemplified by the inscription on the base of the Seabee Memorial:

With Compassion for Others
We Build - We Fight
For Peace and Freedom ❑

CBCs Celebrate 50 Years of Seabee Can Do

The construction battalion centers in Davisville, R.I.; Gulfport, Miss.; and Port Hueneme, Calif., all opened their doors in 1992 to Seabees, past and present, and the community in celebration of the 50th anniversary of the Seabees. Parades, equipment displays, concerts, sporting competitions and the sharing of memories were all part of each event.

Some of the highlights of the anniversary celebrations are featured in the photos on pages 18 to 21.

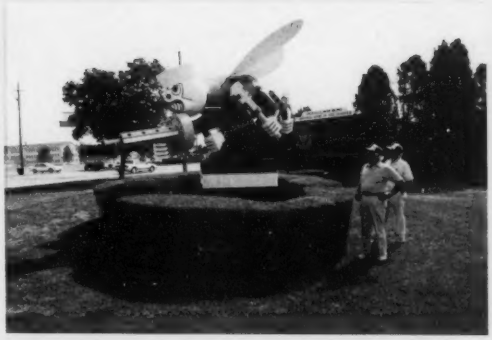
Daniel Cannon (left), a member of the 25th and 133rd Battalions in World War II, and EQCM Bill Napert, a Seabee reservist with the 21st Naval Construction Regiment, share a few moments at the New England Clam Boil. (Photo by CEC Elijah Hilbert, USNR)

Their hats display the First Battalion pride as these World War II Seabees share memories at the Davisville Seabee 50th Anniversary Celebration event.

CBC Davisville

Seabees and their families and friends of Seabees gathered June 12 and 14 at the U.S. Naval Construction Battalion Center, Davisville, for a grand celebration of the 50th anniversary of both the Seabees and the center. Nearly 2,500 former and current Seabees, representing more than 50 Seabee units, travelled to Davisville, the "Original Home of the Seabees," to keep memories alive and to celebrate their joint heritage.

Highlights of the event included base tours, Seabee equipment displays, a parade, a New England Clam Boil and dancing. But most of all, everywhere Seabees could be seen hugging and sharing memories of up to 50 years ago. —By Odette Griffin and JOC Pat Rosanna



Attendees at the Davisville celebration admire the Bee at the "Original Home of the Seabees" front gate.

Some of the thousands of participants at the Davisville Seabee 50th Anniversary Celebration event line up for a New England Clam Boil. (Photo by PH2 Steve Carlson, USNR)

CBC Gulfport

Like many other children at the CBC Gulfport Seabee Days, this little boy enjoyed "getting the feel" of Seabee heavy equipment after donning a Seabee 50th cap and having his face painted.

More than 4,000 visitors attended the open house at Construction Battalion Center Gulfport, Miss., on Seabee Days May 9 and 10.

The visitors viewed displays of Naval Construction Force equipment, Seabee rate-training skills exhibits, and communications equipment and weapons displays.

A complete Seabee field exercise camp including machine gun bunkers, mortar pits, galleys and Southwest Asia huts was set up. Community members and former Seabees also enjoyed a street fair, athletic events and train rides for children.

Seabee Days at CBC Gulfport got off to an early morning start with a 5K run.

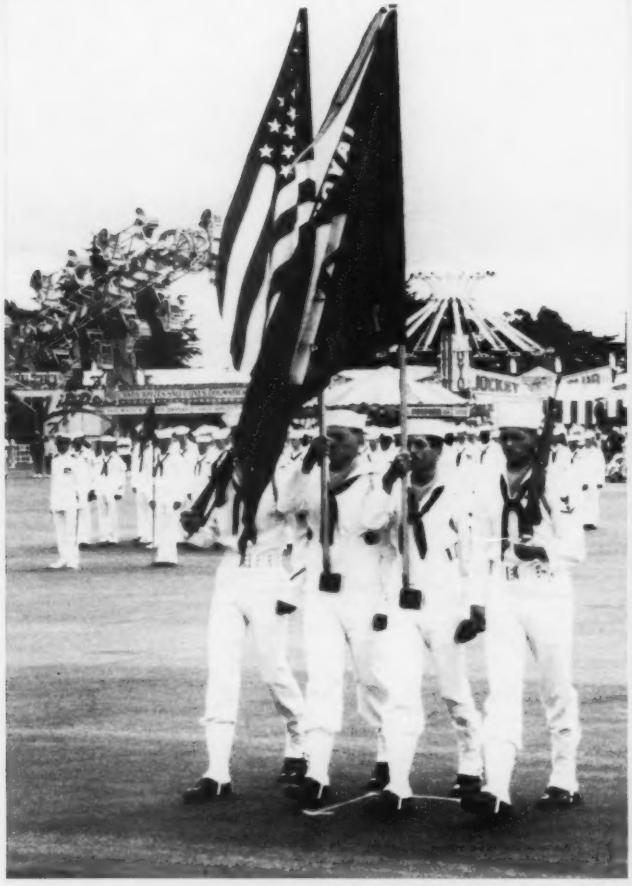
Marines attached to the Marine Inspector general staff aboard CBC Gulfport participate in Seabee Days using an amphibious vehicle in a car smash—a real smash of the day for onlookers.

CBC Port Hueneme

"Once a Seabee, always a Seabee," commented a World War II veteran as the troops passed the review stand at the Seabee 50 Fest celebration at Construction Battalion Center Port Hueneme, Calif. The three-day celebration began on June 4 with former Seabees gathering to reminisce about World War II, Korean or Vietnam days. More than 33,000 visitors attended the Seabee celebration.

Area residents and Seabees, young and old, with their families enjoyed carnival rides, a classic car show, 25 booths of handcrafted items, sporting events, tours of the *USS Fanning* (an anti-submarine warfare ship in port) and 50 food and beverage booths. Seabee camp displays included a military camp with bunkers, timber watch tower, wooden bridges and sea huts. More than 4,000 fans camped on the grass to hear the tunes of country-pop singer Crystal Gayle.
—By Doris Lance

A Seabee spends time with his daughter on a Ferris wheel during Seabee 50 Fest at CBC Port Hueneme.



Rear Admiral Jack Buffington, then-commander, Pacific Division, Naval Facilities Engineering Command and then-commander, Naval Construction Battalions, U.S. Pacific Fleet, attaches a Meritorious Unit Citation streamer to the CBC Port Hueneme command flag.

The 31st Naval Construction Regiment color guard displayed colors during the opening ceremonies at the Seabee 50 Fest at CBC Port Hueneme.

Seabees to the Rescue!

Nearly 800 Seabees participated in disaster relief efforts after Hurricane Andrew

Navy Seabees helped rebuild schools, restore power systems and clear debris in southern Florida in the wake of Hurricane Andrew. The effort involved personnel from Naval Mobile Construction Battalions One and Four, Reserve Naval Mobile Construction Battalion 14, Amphibious Construction Battalion Two, the Navy Energy and Environmental Support Activity, and Construction Battalion Units 410, 412, 419 and 420.

Personnel and equipment mobilized by air, sea and land. NMCB Four's air detail flew in from their Roosevelt Roads, Puerto Rico deployment site. ACB Two was transported in and out of southern Florida by ships. Other Seabees arrived as part of large convoys of trucks traveling on the highways from as far away as Charleston, S.C., and Gulfport, Miss.

Seabees helped restore the area's power system by installing more than 100 utility poles and providing and operating portable generators. They repaired street and traffic lights and removed tons of debris.

Nearly 800 Seabees were involved in disaster recovery efforts in southern Florida. The Seabees assisted 47 public schools, cleaning and repairing hundreds of classrooms and hallways and repairing numerous roofs in only 11 days. All but 10 of Dade County's 288 public schools opened on time. ❑

Top: Men of NMCB One work late into the afternoon at the Robert Morgan Vocational Technical Institute to beat Mother Nature before she unloads the heavy rains that plagued the Homestead area after the hurricane.

Left: A member of NMCB One completes a torch cut of a light pole bent in half at its base from the devastating winds of Andrew.

Bottom Right: Even the steel and concrete-based parking lights at the South Dade Skills Center in East Homestead weren't immune from the wrath of Hurricane Andrew. A member of Naval Mobile Construction Battalion One tapes up the loose wiring left exposed to the elements.

Total Quality Leadership Update

No 'Justas' at NAVFAC

By Tiffany Rushton

The first things you notice when you meet Trichel Harris are her sparkling smile and vivacious personality. Trichel, a management assistant for the operations research consultant group at the Naval Facilities Engineering Command Headquarters, joined the command in September 1989. Now, three years later, Trichel is proving that she has the kind of team spirit that makes total quality leadership work.

During a total quality leadership customer focus training session sponsored by NAVFAC headquarters, the instructor, told a story about people who either pigeonholed themselves or were pigeon-holed by others into believing they were "just a" secretary or manager or whatever.

When Trichel heard that story, it struck a chord of truth for her. She knew *she* played by the "Golden Rule" of "doing unto others as you would have them do unto you," and treating everyone as equals, but she still felt many people viewed *her* as "just a" secretary.

So she designed a "no justa" logo and started wearing it around her office. Soon she began receiving encouraging comments from several secretaries with whom she worked. After a few more compliments, Trichel felt confident enough to approach the assistant commander for facilities planning, Captain Talbot Bone, CEC, USN, with her sketch. He liked it, and Trichel's "no justa" campaign was launched.

Now many offices throughout the command display the "no justa" logo and the "justa awareness" flyer which explains what the campaign is all about. Although her idea has been well received thus far, Trichel hopes to see the "no justas" ideology officially incorporated into the command's TQL charter. She wants the notion of "no justa" to be validated, and by incorporating it into the charter, she feels it will receive the recognition it deserves. "I want it to be given credibility, not just lip service," says Trichel.

She believes that empowering people to feel proud about themselves and others benefits everyone: the individual, the code and NAVFAC overall. Her philosophy is simple: "If you take care of your people, your people take care of you, and the organization [virtually] runs itself."

From her logo design to her contagious enthusiasm, Trichel Harris is far from being "just a" anything. ❑

Tiffany Rushton is the editor of The Blueprint newspaper at the Naval Facilities Engineering Command Headquarters in Alexandria, Va. This article is adapted from the July 1992 edition of The Blueprint.

The Quality Bill of Rights: Let's Put It Into Practice!

The quality bill of rights supports the cultural change which is needed to encourage each member of the command to initiate responsible actions that will contribute to client satisfaction, quality and productivity improvement. The sensible exercise of these rights will result in improved products and services both to our internal and external clients. The rights are:

1. The **right** to challenge business as usual

2. The **right** to be heard

3. The **right** to expect a commitment to quality

4. The **right** to place quality before production

5. The **right** to feel genuine pride in NAVFAC products and services

(Reprinted from the Jan. 26, 1992, *NORTHERN DIVISION NQL UPDATE*) ❑

59 Complete Basic Training at CECOS

Fifty-nine members of basic class number 197 have graduated from the Naval School, Civil Engineer Corps Officers, Port Hueneme, Calif. Course work is comprised of eight weeks of specialized training pertinent to the Navy's needs for shore installation engineering, public works management, construction contracting and administration, and Seabee operations.

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Oceana, Va.

LCDR Abdullah T. Al-Ahmadi
BSCE/UPM Saudi
to Royal Saudi Naval HQ

Hassan M. Al-Zabidi
BSCE/UPM Saudi
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ENS Leaf A. Ballast
BSCE/Texas A&M Univ.
to NMCB Five,
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BSCE/Carnegie Mellon Univ.
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BSME/Penn State Univ.
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* With Distinction
‡ Class Commander
Φ First in Class

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Advice of Counsel

Dealing With Environmental Regulators

Part 1: The Administrative Record

By Ralph Lombardo, Esq.

The Navy is subject to a myriad of environmental laws and regulations. Sovereign immunity, for all practical purposes, has been waived for matters concerning environmental protection and regulation, placing the Navy squarely within the regulated environmental community. The Navy, like any other large community, municipality or industry, must be prepared to deal directly with the federal, state and local agencies entrusted with law enforcement.

This article is the first in a series of three articles dealing with environmental regulators. The three articles will address the administrative record, inspections and negotiation following notice of violation, and will provide advice for dealing with regulatory and enforcement agencies.

The administrative record, inspections and negotiation following notice of violation directly affect each other. In addition, daily action or inaction may alter the course of one or more of these items. Beginning with this discussion of the administrative record, I intend to provide some basics of law along with an understanding of how the environmental regulatory business can be made to work to the advantage of the Navy.

Administrative record

The majority of federal decisions on regulated environmental matters are subject to judicial review pursuant to the Administrative Procedures Act. An interested party (injured, concerned or damaged) may ask a court to overturn a federal decision if that decision is not rational. Through a review of the administrative record, the court determines whether the challenged decision is rationally based. The reviewing court may not substitute itself into the role of the decision maker.

In theory, the courts refrain from considering the appropriateness of a decision and rule only on the adequacy of the information contained in the administrative record. A court, however, may find that the record relied upon

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by the decision maker is seriously flawed. In that case, the decision would be declared void as being arbitrary and capricious. An appropriate injunction or other remedy would be ordered by the court.

The Navy, as a regulated federal entity, must be mindful of the importance of its administrative record. Any Navy environmental decision may be subject to review. In addition, since many states have similar administrative procedure laws, the Navy must make sure that regulatory and enforcement decisions are based on correct and current information. The best way for the Navy to protect its interest and to promote fair consideration by the regulatory community is to double check the administrative record being used by the regulator.

An administrative record is a compilation of the documentation assembled during decision making. It includes reports, letters, phone logs, diaries, notes, transcripts, margin comments, charts, maps, official notices and inspection summaries. It also includes all information used by the decision maker in formulating the challenged decision. If that information is not documented, the reviewing court will be reluctant to consider that information as part of the administrative record.

Relevant, adequate and complete

Information contained in the record must be relevant to the ultimate decision. Relevancy means that information relied upon is logically connected to the decision. For example, a regulatory agency's denial of a water quality certificate for dredge disposal may be challenged if the record shows that the decision was based on the applicant's failure to put a traffic signal at the shoreside pier. Arguably, shoreside traffic information is not relevant in consideration of the impacts that a disposal action may have on water quality.

Information contained in the record must be adequate and complete. Any regulatory decision not based on *all of the right type* of information is in serious jeopardy. A record supporting a decision to grant a contaminated material disposal permit that fails to contain up-to-date bioaccumulation assays will not withstand scrutiny. Similarly, if that decision was based on information gathered from the wrong type of assay, it also would fall.

Managing the administrative record

Keep the ball in the other guy's court. In dealing with environmental regulatory agencies, always attempt to have the last say in the record. The Navy, as a regulated party, can make sure that the agency is fully aware of its plans to proceed in a given matter. It is always better to have the regulatory agency explain to the reviewing official why a disagreement or misunderstanding with the Navy position is not explained in the record. This is especially the case where the Navy's position is clearly set forth without rebuttal by the regulatory agency. Remember, completeness in the record is important. A few things to keep in mind include:

- Follow all phone calls with conversation confirmation letters
- Log all inquiries and phone calls
- Periodically review the records kept by the agency
- Correct or rebut any discrepancies found in writing
- *Never* miss a filing deadline

Keep the files clean. The Navy, as with many large organizations, generates an enormous amount of paperwork. In most cases, there is no need (except in the few instances required by law, such as after a discovery or similar request for information) to keep drafts of a document once that document becomes final. Draft versions may have no relation to the report used in decision making. While it is important to have a complete record, it is also important that the record doesn't contain extraneous information. Such a record is difficult to review and may be declared inadequate.

In reviewing documents, do not place personal, nonrelevant comments in the margin of the text. Those comments become part of the administrative record.

Is everything up to date? Periodically review the files. Many of the environmental permits held by Navy facilities have monitoring requirements. When placed in an adversarial or negotiating posture with a regulatory agency, it is important that the record clearly shows that the Navy is either up-to-date with all of its legal obligations or that the agency is fully aware of any failure to meet a permit requirement.

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The Navy can affect its regulated destiny by keeping a hands-on approach in managing and protecting the integrity of the administrative record. In all actions on matters that come under environmental regulatory control, the Navy must ask itself how those actions will be represented in the administrative record. ❑

Inspections will be discussed in the upcoming issue of the Navy Civil Engineer magazine.

President Bush Praises the Seabees' Relief Efforts

The Can Do spirit of the Seabees was recognized by President George Bush in a letter to Acting Secretary of the Navy Sean O'Keefe. President Bush praised the efforts of the Seabees in coming to the aid of their fellow citizens in Florida in the aftermath of Hurricane Andrew. The letter, dated September 18, read:

> Monday evening I called the Superintendent of Dade County, Octavio Visiedo, to congratulate him on the rapid recovery from Hurricane Andrew and opening of most of the public schools. He was full of praise for the skill, dedication and positive cooperation of the Navy's Seabees whose repair assistance made the opening possible.
>
> Please extend to the Seabee units involved my personal appreciation for their outstanding contributions and this further demonstration of the "Can Do" spirit.

Navy Civil Engineer Magazine Wins Award

The Navy Civil Engineer Magazine has received an award in the 1992 Blue Pencil Competition of the National Association of Government Communicators. The magazine won an honorable mention award in the Publication for Technical or Professional Audience category.

RADM Drennon Receives Second Star

Rear Admiral Patrick W. Drennon, CEC, USN, has been promoted to the rank of rear admiral (upper half).

RADM Drennon has served as the director, Shore Activities Division (N44) for the Chief of Naval Operations (CNO), since July 1990. Prior to this assignment, he served as the commander of WESTDIV. Other recent assignments also include duty as deputy commander for planning and assistant commander for facilities and real estate at NAVFAC Headquarters, as well as the assistant for civil engineering (OP-04E) to the Deputy CNO (Logistics).

CEC Officers and LANTDIV Team Go to Somalia

Three Civil Engineer Corps officers have been assigned to the Joint Task Force Somalia for Operation Restore Hope. They are Commander William F. Boudra, CEC, USN, from NAVFAC headquarters; Lieutenant Commander William S. Duffy, CEC, USN, from NORTHDIV; and Lieutenant Cameron A. Manning, CEC, USN, from the Third Naval Construction Brigade in Pearl Harbor. Also, a Seabee, Chief Builder Wayne Martin of CBU 422, has been assigned to the task force. CDR Boudra, LT Manning and BUC Martin will be assigned to the Logistics Directorate (J4), and LCDR Duffy will be assigned to the Operations Directorate (J3).

An advance team from the Atlantic Division, Naval Facilities Engineering Command departed for Somalia December 5. The team is led by Captain James S. Spore II, CEC, USN, head of the LANTDIV Acquisition Department. The five-person team includes construction, planning, contracts and real estate experts.

LANTDIV's role will be to provide facilities contracting support to the Joint Task Force. This will include real estate, construction and facility support contracts for U.S. forces deployed in Operation Restore Hope. It is not yet known how extensive LANTDIV's effort will be over the coming weeks.

EFA, Midwest Is Established

As part of the Naval Facilities Engineering Command's restructuring plans, Engineering Field Activity, Midwest was established effective October 29. The commanding officer is Captain James P. Kovalcik, CEC, USN. The address is Commanding Officer, Engineering Field Activity, Midwest, Building 1A, Great Lakes, IL 60088-5600. Telephone: (708) 688-6895/5711. Fax: (708) 688-4845.

Rear Admiral Jack E. Buffington, CEC, USN, Commander, Naval Facilities Engineering Command and Chief of Civil Engineers, presents a rare golden Seabee to Rear Admiral Lewis B. Combs, CEC, USN (Ret). RADM Combs was Admiral Ben Moreell's deputy at the Bureau of Yards and Docks from 1938 to 1946. RADM Combs was instrumental in the formation of the Seabees 50 years ago. As part of the golden anniversary of the Seabees, the golden Seabee was presented to him at his home in Red Hook, N.Y.

NMCBs Five and 133 Are Best of Type

Congratulations to the officers, chiefs and men of Naval Mobile Construction Battalion Five and Naval Mobile Construction Battalion 133!

NMCB Five was selected as the FY 92 Best of Type Seabee battalion from the Pacific Fleet. NMCB 133 was selected as the FY 92 Best of Type Seabee battalion from the Atlantic Fleet.

NMCB Five had an outstanding homeport period of military training and outstanding deployments to Okinawa, Korea, mainland Japan and Adak, Alaska. Additionally, a sea embarked detail participated in Exercise Cobra Gold in Thailand and in Operation Water Pitcher, the disaster recovery effort to Chuuk. The commanding officer of NMCB Five is Commander Harrison B. Whittaker II, CEC, USN.

NMCB 133 distinguished itself in executing urgent Subic Bay roll back construction support, by participating in Typhoon Omar relief efforts and by demonstrating across the board excellence in all aspects of Seabee operations. The commanding officer of NMCB 133 is Commander Douglas F. Elznic, CEC, USN.

Two PWCs Are Established

Public works centers in Jacksonville, Fla., and Washington, D.C., were established this summer. The PWCs were established as a result of Defense Management Report Decision No. 967, which directed that base engineering services be consolidated to save money.

Public Works Center Jacksonville, Fla., was established effective August 20. The commanding officer is Captain Gary E. Monroe, CEC, USN. The address is Commanding Officer, Navy Public Works Center Jacksonville, P.O. Box 30, Naval Air Station, Jacksonville, Fla. 32212-0030. Telephone: (904) 772-5132. Fax: (904) 772-5143.

Public Works Center Washington, D.C., was established effective August 1. Captain John S. Ahl, CEC, USN, is the commanding officer. The address is Commanding Officer, Public Works Center Washington, Bldg. 171, Washington Navy Yard, 901 M St., SW, Washington, D.C. 20374-5041. Telephone: (202) 433-7085. Fax: (202) 433-2495.

Active & Reserve Battalions Integrated Into Two Naval Construction Brigades

The Naval Construction Force reorganized and integrated its active duty and reserve battalions and other subordinate units into two Naval Construction Brigades under the operational control of the Commanders-in-Chief (CINCs) of the U.S. Atlantic and Pacific Fleets.

This reorganization created the Atlantic Fleet's Second Naval Construction Brigade, based at Naval Amphibious Base Little Creek, Va., replacing Commander, Naval Construction Battalions, U.S. Atlantic Fleet.

Rear Admiral Melvin H. Chiogioji, CEC, USNR, Commander, Reserve Naval Construction Force, assumed command of the Second NCB, becoming commander of Atlantic Fleet Seabees.

Commander, Naval Construction Battalions, U.S. Pacific Fleet, based in Pearl Harbor, Hawaii, became Commander, Third Naval Construction Brigade. Rear Admiral Brian Estes, CEC, USN, is the Third NCB commander.

With this integration, the First Naval Construction Brigade, which had operational control of reserve Seabee units of more than 15,000 people, was disestablished. Reserve Seabee units have been equally divided between the Second and Third NCBs, and report to their respective fleet CINCs via the brigade commanders.

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Have you considered the reserves?

For a challenging, rewarding career...

If you are a young construction professional in civilian practice or civil service, or are a graduating engineering or architecture college senior who has already selected a civilian career path, the reserve Civil Engineer Corps may have a place for you. Qualified young professionals have the chance to achieve tremendous personal and professional satisfaction through...

- Direct appointment as an ensign, Civil Engineer Corps, United States Naval Reserve
- Challenging assignments within reserve Naval Construction Force units in your geographic locale, in areas paralleling active duty in the Seabees or in facilities management
- Annual active duty training that is meaningful
- Development of leadership and technical skills that will carry over directly into your civilian profession
- A naval reserve retirement package for a little something extra in your old age

Here's what you can do...

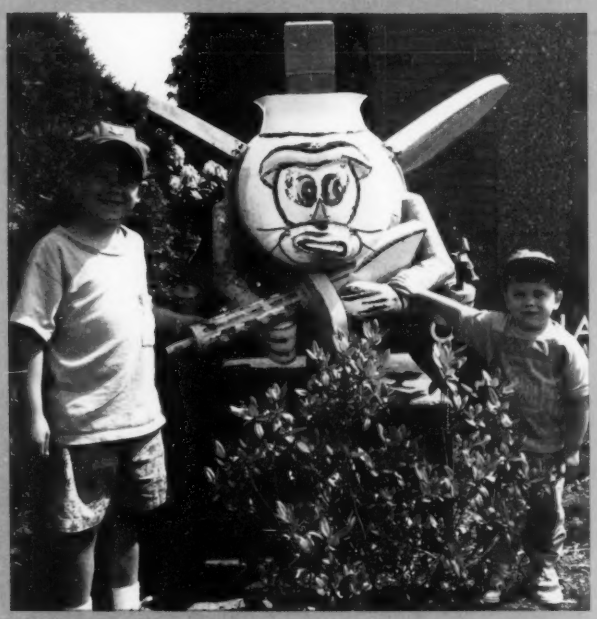
If you are a young engineer or architect, please call or write a reserve representative listed below.

LCDR Scott Cleveland, CEC, USN
RNCF Representative, Atlantic Area
Building NH47, Naval Base
Charleston, SC 29408-5192
Phone: (803) 743-2650
DSN: 563-2650

LCDR Doug Stauffer, CEC, USN
RNCF Representative, Pacific Area
Naval Training Center, Building 304
San Diego, CA 92133-1000
Phone: (619) 524-6846
DSN: 524-6846

Or contact an active duty accessions officer listed on page 27 for further information.

Forty-four members aboard Construction Battalion Center Gulfport, Miss., reenlisted during the 50th anniversary rededication of CBC Gulfport.



Brent Walker (left) and his brother Kyle were some of the participants of all ages who enjoyed visiting the "Original Home of the Seabees" for the Construction Battalion Center Davisville, R.I., Seabee 50th Anniversary Celebration event. (Photo by CEC Elijah Hilbert, USNR)

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